	Application No.	Applicant(s)
Notice of Allowability	10/614,951	LEE ET AL.
	Examiner	Art Unit	
	Tanh Q. Nguyen	2182	

*-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *01/16/07 (RCE)* .

2. ☒ The allowed claim(s) is/are *8-15 and 17*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

     (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

     (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

     Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 15, 2006 has been entered.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with the attorney for applicant, Anthony P. Onello, Jr. (Reg. No. 38,572) on March 13, 2007 to resolve minor informalities, clarify the scope of the claims and put the application in condition for allowance.

The application has been amended as follows:

8. (currently amended) A network controller having transmitting and receiving buffers, comprising an internal arbiter monitoring the transmitting and receiving buffers, and arbitrating access to a system bus between the

transmitting and receiving buffers in response to requests for access to the

system bus from the transmitting and receiving buffers,

wherein the internal arbiter comprises:

an emergency mode determination circuit receiving an occupancy level of

data in the receiving buffer and a vacancy level of data in the transmitting buffer,

determining whether a present operational state corresponds to an emergency

mode as a function of the occupancy level and the vacancy level, and outputting

an emergency mode signal on an emergency mode signal line, wherein the

emergency mode determination circuit comprises:

a first comparing circuit comparing the occupancy level of the

receiving buffer with a threshold occupancy level of the receiving buffer

and outputting a first comparison result signal;

a second comparing circuit comparing the vacancy level of the

transmitting buffer with a threshold vacancy level of the transmitting buffer

and outputting a second comparison result signal; and

an output circuit that outputs the emergency mode signal in

response to the first comparison result signal and the second comparison

result signal;

a first determination circuit for determining if the occupancy level of the

receiving buffer is increasing, and outputting a result of the determination as a

first signal on a first signal line, the first signal indicating whether the occupancy

level of the receiving buffer is increasing;

a second determination circuit for determining if the vacancy level of the

transmitting buffer is increasing by comparing the vacancy level of the

transmitting buffer with a previous transmitting buffer vacancy level that is stored

in the second determination circuit and for outputting a result of the

determination as a second signal on a second signal line, the second signal

indicating whether the vacancy level of the transmitting buffer is increasing;

a comparing circuit comparing the vacancy level of the transmitting buffer

with the occupancy level of the receiving buffer and outputting a comparison

result signal on a comparison result signal line that indicates which of the

occupancy level of the receiving buffer and the vacancy level of the transmitting

buffer is greater; and

a logic circuit coupled to the emergency mode signal line, the first signal

line, the second signal line, and the comparison result signal line, and outputting

a permission signal to the receiving buffer or the transmitting buffer in response

to a combination of the emergency mode signal, the first signal indicating

whether the occupancy level of the receiving buffer is increasing, the second

signal indicating whether the vacancy level of the transmitting buffer is

increasing, and the comparison result signal, the permission signal granting

access to the system bus to one of the transmitting buffer and receiving buffer.

9.   (currently amended) The network controller of claim 8, wherein ~~the~~

~~emergency mode determination circuit comprises:~~

~~a first comparing circuit comparing the occupancy level of the receiving~~

~~buffer with a threshold occupancy level of the receiving buffer and outputting a~~

~~first comparison result signal;~~

~~a second comparing circuit comparing the vacancy level of the transmitting~~

~~buffer with a threshold vacancy level of the transmitting buffer and outputting a~~

~~second comparison result signal; and~~

<u>the output circuit of the emergency mode determination circuit comprises</u>

an <u>AND means, the</u> AND means performing an AND operation on the first and

second comparison result signals output by the first and second comparing

circuits and outputting the emergency mode signal.

12.   (currently amended) A method of <u>arbitrating access to a system bus</u>

<u>between</u> ~~controlling at least one of~~ a transmitting buffer and a receiving buffer of

a network controller, comprising:

receiving ~~at least one~~ request<u>s</u> for access ~~of a~~ <u>to the</u> system bus from the

transmitting buffer and the receiving buffer; and

determining a vacancy level of data in the transmitting buffer and an

occupancy level of data in the receiving buffer and granting access to the system

bus to one of the transmitting buffer and the receiving buffer, wherein granting

access to the system bus comprises:

determining a present operational state as an emergency mode when

both the transmitting buffer and receiving buffer request access to the

system bus, when the occupancy level of the receiving buffer is higher

than a threshold occupancy level of the receiving buffer, and when the

vacancy level of the transmitting buffer is higher than a threshold vacancy

level of the transmitting buffer, and, in response, generating an emergency

mode signal; and

when the operational state is determined as the emergency mode:

comparing the occupancy level of data in the receiving buffer

with the vacancy level of data in the transmitting buffer, and, in

response, generating a comparison result signal that indicates which

of the occupancy level of data in the receiving buffer and the

vacancy level of data in the transmitting buffer is greater, and

wherein if the comparison result signal indicates that the occupancy

level of data in the receiving buffer is greater than the vacancy level

of data in the transmitting buffer, then determining if the occupancy

level of the receiving buffer is increasing by comparing the

occupancy level of the receiving buffer with a previous receiving

buffer occupancy level, and, in response, generating a first signal

that indicates whether the occupancy level of the receiving buffer is

increasing, and wherein if the comparison result signal indicates that

the occupancy level of data in the receiving buffer is not greater than

the vacancy level of data in the transmitting buffer, then determining

if the vacancy level of the transmitting buffer is increasing by

comparing the vacancy level of the transmitting buffer with a stored

previous transmitting buffer vacancy level, and, in response,

generating a second signal that indicates whether the vacancy level

of the transmitting buffer is increasing; and

granting access to the system bus to one of the transmitting

buffer and the receiving buffer in response to a combination of the

emergency mode signal, the first signal indicating whether the

occupancy level of the receiving buffer is increasing, the second

signal indicating whether the vacancy level of the transmitting buffer

is increasing, and the comparison result signal.

13.   (currently amended) The method of claim 12, wherein when the

present operational state does not correspond to the emergency mode, the

occupancy level of the receiving buffer is compared with the vacancy level of the

transmitting buffer, ~~and one of the transmitting and receiving buffers is granted~~

~~access to the system bus,~~ and wherein

the receiving buffer is granted access to the system bus when the

occupancy level of the receiving buffer is higher than the vacancy level of the

transmitting buffer, and the transmitting buffer is granted access to the system

bus when the vacancy level of the transmitting buffer is higher than the

occupancy level of the receiving buffer.

14.   (currently amended) The method of claim 12, wherein when the

present operational state corresponds to the emergency mode, the occupancy

level of the receiving buffer is compared with the vacancy level of the

transmitting buffer, ~~and one of the transmitting and receiving buffers is granted~~ ~~access to the system bus based on the comparison result,~~ and wherein

when the occupancy level of the receiving buffer is higher than the vacancy level of the transmitting buffer, the receiving buffer is granted access to the system bus if the occupancy level of the receiving buffer is increasing; and

when the occupancy level of the receiving buffer is not higher than the vacancy level of the transmitting buffer, the transmitting buffer is granted access to the system bus if the vacancy level of the transmitting buffer is increasing.

16.   (canceled)

17.   (currently amended) The method of claim 12 ~~wherein granting access~~ ~~to the system bus comprises~~ <u>further comprising</u> receiving [[the] <u>a</u> request for access to the system bus from ~~at least~~ one of the transmitting and receiving buffers and granting access of the system bus to the one of the transmitting and receiving buffers sending the request.

Conclusion

3.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.
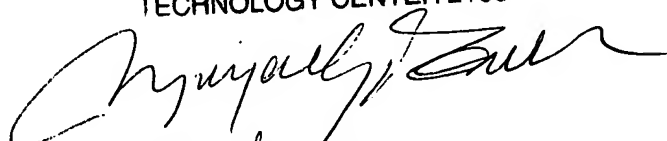
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER
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March 13, 2007

TQN
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